

REMARKS

Claims 1-16 remain pending in the application. Reconsideration is respectfully requested in light of the following remarks.


Section 102(e) Rejection:

The Office Action rejected claim 1 under 35 U.S.C. § 102(e) as being anticipated by Marchok (U.S. Patent 6,118,758). Applicants traverse this rejection and assert that pending claim 1 is not anticipated by Marchok for at least the following reasons.

Marchok does not teach a plurality of functional units configured to operate in series according to a serial communication protocol, wherein each functional unit is configured to perform a different specific function of said serial communication protocol, as recited in claim 1. The Examiner refers to functional units 115, 120, 125 and 130 shown in Fig. 6 of Marchok. However, these functional units operate on an OFDM/DMT signal. An OFDM/DMT signal is an RF signal in which multiple data bits are simultaneously represented in a “constellation” according to a particular frequency phase and amplitude (*see, e.g.*, Fig. 3; col. 4, lines 1-31). The OFDM/DMT signal is not a serial data stream. Thus, the functional units shown in Fig. 6 of Marchok do not operate according to a serial communication protocol. || ←

In the “Response to Arguments” section of the Final Action, the Examiner refers once again to Fig. 6 of Marchok and asserts that functional units 115, 120, 125 and 130 shown therein “...each had a unique function and connected in series to the time and control logic unit 140... [and] are also connected in serial and performed different function in serial order....” Applicants strongly disagree that Marchok in any way teaches or suggests a plurality of functional units configured to operate in series according to a serial communication protocol, as argued above. Applicants note that merely coupling multiple functional units in series is not in itself suggestive that those

functional units operate according to any sort of communication protocol, much less a serial communication protocol as recited in Applicants' claim.

Furthermore, Marchok does not teach a controller for transmitting and receiving a serial data stream including multiple serial data channels having portions which alternate in time with respect to each other, wherein the plurality of functional units is configured to perform said serial communication protocol on the multiple serial data channels, as recited in claim 1. The OFDM/DMT signal in Marchok is not a serial data stream including multiple serial data channels having portions which alternate in time with respect to each other. The Examiner refers to the connections between the timing and control logic 340 in Marchok. However, these connections are simply the control signals for the functional units in Fig. 9. The connections between the timing and control logic 340 in Marchok are clearly not multiple serial data channels of a serial data stream. Moreover, the functional units in Marchok's Figs. 6 and 9 operate on an OFDM/DMT signal. Thus, the functional units in Marchok do not perform a serial communication protocol on the multiple serial data channels which alternate in time with respect to each other in a serial data stream. 

In the "Response to Arguments" section of the Final Action, the Examiner asserts that the recitation "a controller for transmitting and receiving a serial data stream including multiple serial data channels having portions which alternate in time with respect to each other" was not given patentable weight because the recitation occurs in the preamble of claim 1. However, just because a limitation appears in the preamble does not necessarily mean that it should not be accorded patentable weight. According to MPEP 2111.02, whether a given recitation in a preamble limits a claim is determined "...on a case-by-case basis in light of the facts in each case; there is no litmus test defining when a preamble limits the scope of a claim" (citing *Catalina Mktg. Int'l v. Coolsavings.com, Inc.*, 289 F.3d 801, 808, 62 USPQ2d 1781, 1785 (Fed. Cir. 2002)). Additionally, MPEP 2111.02 notes that "[the] claim preamble must be read in the context of the entire claim." (emphasis added)

Applicants note that the preamble of claim 1 recites the following elements which are incorporated into the body of the claim by being referenced in the body of the claim: a serial data stream including multiple serial data channels having portions which alternate in time with respect to each other. Furthermore, it is noted that the body of the claim refers to certain of these elements, not by way of newly introducing these elements (e.g., “a plurality of serial data channels”, “a portion”), but by specifically referring to the elements as previously introduced (e.g., “the multiple serial data channels”, “the portion”). Applicants submit that in this instance, the body of claim 1 would be unintelligible without the structure set forth in the preamble, including the limitation that portions of the multiple serial data channels alternate in time with respect to one another. In this type of situation, MPEP 2111.02 and case law such as *Catalina Mktg.* make clear that the features from the preamble must be considered limitations of the claim.

This argument also applies to claim 6.

As argued above, Marchok fails to teach or suggest all of the elements of Applicants’ claim 1, and therefore Marchok cannot be said to anticipate claim 1. Applicants remind the Examiner that anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim. *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984). The identical invention must be shown in as complete detail as is contained in the claims. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Section 103(a) Rejections:

The Office Action rejected claim 2 under 35 U.S.C. § 103(a) as being unpatentable over Marchok in view of Rowett (U.S. Patent 5,991,817). Applicants traverse this rejection and assert that claim 2 is patentable for at least the reasons given above in regard to claim 1.

Claims 3-5 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Marchok in view of Kurnick (U.S. Patent 5,721,726). Applicants traverse this rejection and assert that claims 3-5 are patentable for at least the reasons given above in regard to claim 1.

Claims 6-11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kurnick in view of Rowett. Applicants traverse this rejection and assert that these claims are distinguishable in light of the following remarks.

Kurnick in view of Rowett does not teach or suggest a serial communication controller for transmitting and receiving a serial data stream including alternating portions of multiple serial data channels, comprising a memory unit including a separate portion allocated to each of the multiple serial data channels for storing the state information of the functional units, as recited in claim 6. The Examiner refers to Kurnick's dual ported RAM 84. However, the dual port RAM 84 of Kurnick is not a memory unit including a separate portion allocated to each of the multiple serial data channels for storing the state information of the functional units. There is no teaching or suggestion in Kurnick that its dual port RAM 84 includes separate portion allocated to each of the multiple serial data channels. Nor does Kurnick contain any teaching or suggestion that its dual port RAM 84 stores state information for the functional units. Nor does Rowett teach or suggest a memory unit including a separate portion allocated to each of the multiple serial data channels for storing the state information of the functional units.

In the "Response to Arguments" section of the Final Action, the Examiner asserts that the recitation "a controller for transmitting and receiving a serial data stream including multiple serial data channels having portions which alternate in time with respect to each other" was not given patentable weight because the recitation occurs in the preamble of claim 6. Applicants note that the preamble of claim 6 specifically recites: "A serial communication controller for transmitting and receiving a serial data stream including alternating portions of multiple serial data channels." As argued above

with respect to claim 1, Applicants assert that the multiple data channels and their alternating portions, as recited in the preamble of claim 6, are necessary to render the entirety of claim 6 intelligible since they are referenced in the body of the claim.

Furthermore, Kurnick in view of Rowett does not teach or suggest a microcontroller coupled to each of the plurality of functional units and to the memory unit, wherein the microcontroller is configured to transfer state information between the plurality of functional units and the memory unit such that the plurality of functional units operates alternately upon the portions of the multiple serial data channels, as recited in claim 6. The Examiner refers to RISC controller 50, col. 6 lines 52-54 and col. 7 lines 3-10 of Kurnick. However, the cited portions of Kurnick state nothing about RISC controller 50 transferring state information between functional units 60-72 and dual port RAM 84 such that the plurality of functional units operates alternately upon the portions of the multiple serial data channels. Col. 7, lines 3-10 refers to the data being transmitted or received by the SCC units, not state information. Upon a thorough reading of Kurnick and Rowett, Applicants find no teaching or suggestion of a microcontroller configured to transfer state information between the plurality of functional units and the memory unit such that the plurality of functional units operates alternately upon the portions of the multiple serial data channels. Applicants note that the Examiner did not specifically respond to this argument in the Office Action.

Similarly, Kurnick and Rowett do not teach or suggest that different state information is transferred for each serial data channel depending on which serial data channel's portion is being operated on by the plurality of functional units, as recited in claim 6. The portions of Kurnick cited by the Examiner do not appear to have any relevance to this limitation of claim 6. Nor does Rowett teach or suggest this limitation.

In the "Response to Arguments" section of the Final Action, the Examiner asserts that Kurnick discloses different transmitting and receiving state information, and that

Rowett discloses transmitting and receiving controlled by TX-control 139a and RX-control 139b. Applicants strongly disagree that this in any way teaches or suggests the limitation that different state information is transferred (from the microcontroller to the functional units and memory, as recited elsewhere in claim 6) depending on which of the alternating portions of a serial data channel is being operated on by the functional units.

As recited elsewhere in claim 6, the state information transferred to a functional unit determines the operation of that functional unit. Neither Kurnick nor Rowett teaches or suggests that such state information is transferred, and thus functional unit operation altered, according to which alternating portion of a data channel is currently being operated on.

Furthermore, Kurnick and Rowett do not teach or suggest that each functional unit comprises a programmable state register, and wherein state information stored within the state register of a given functional unit determines the one of the unique operating states in which the functional unit is operating, as recited in claim 6. The Examiner refers to Rowett's Tx status FIFO 139a. Applicants do not see any relevance of Rowett's Tx status FIFO 139a to this limitation of claim 6. As described at col. 12, lines 53-62, the Tx status FIFO 139a is used to associate status from the interface SCCs on the termination of packet transmission with the appropriate buffer descriptor. The Tx status FIFO 139a of Rowett is clearly not a programmable state register that stores state information stored that determines one of a set of unique operating states in which a given functional unit is operating. Neither Kurnick nor Rowett teach or suggest this limitation.

In the "Response to Arguments" section of the Final Action, the Examiner asserts that Kurnick discloses functional units 60-72 as either in transmitting or receiving state, and that Rowett discloses transmit and receive FIFOs 44 in each channel and configured to store transmit and receive data packets. However, storing data packets in a transmit or receive FIFO does not in any way teach or suggest a programmable state register, the state information stored in which determines a functional unit operating state.

Claim 11 is patentable over Kurnick and Rowett for reasons similar to those given above for claim 6 corresponding to the limitations of claim 11.

Claims 14-16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kurnick in view of Marchok. Applicants traverse this rejection and submit that these claims are distinguishable in light of the following remarks.

Kurnick in view of Marchok does not teach or suggest a timing recovery unit configured to produce a clock signal derived from the receive serial data stream and to provide the receive serial data stream, as recited in claim 14. The Examiner refers to the timing and control logic 140 and col. 6, line 65 to col. 7, line 1 of Marchok. However, the timing and control logic 140 of Marchok has absolutely nothing to do with producing a clock signal derived from the receive serial data stream. Nor does it provide the receive serial data stream. Applicants find no teachings in either Kurnick or Marchok of a timing recovery unit configured to produce a clock signal derived from the receive serial data stream.

In the “Response to Arguments” section of the Final Action, the Examiner refers again to timing and control logic of 140 and makes reference to coordination and ordering of the activities of Marchok’s functional units 115, 120, 125 and 130. However, using a clock signal to coordinate activity of functional units does not in any way teach or suggest how that clock signal is produced, much less that the clock signal is derived from a serial data stream as recited in Applicants’ claim. As argued above, neither Kurnick nor Marchok make any teaching or suggestion as to the derivation of a clock signal from a receive serial data stream in a timing recovery unit.

Furthermore, Kurnick in view of Marchok does not teach or suggest a plurality of functional units configured to operate in series according to a serial communication protocol, and wherein each functional unit is configured to perform a different specific function of the same serial communication protocol, and wherein the plurality of functional units operates alternately upon the portions of the

multiple serial data channels of the receive serial data stream to perform the serial communication protocol on the multiple serial data channels, as recited in claim 14.

The Examiner refers to functional units 60-72 of Kurnick. However, as shown in Fig. 2 of Kurnick, functional units 60-72 operate in parallel, not in series. Furthermore, Kurnick's functional units are each configured independently to implement different protocols (Kurnick -- col. 6, lines 4-10). Kurnick's functional units do not each perform a different specific function of the same serial communication protocol. Nor do Kurnick's functional units operate alternately upon the portions of the multiple serial data channels.

In the "Response to Arguments" section of the Final Action, the Examiner refers to functional units 115, 120, 125 and 130 of Marchok and asserts that "since the functional units are connected in series and operated in series, it operated alternatively [sic]." Applicants strongly disagree. Simply connecting functional units in series does not in any way suggest that those functional units operate alternately upon the portions of the multiple serial data channels of the receive serial data stream to perform the serial communication protocol on the multiple serial data channels, as recited in claim 14.

Allowable Subject Matter:

Claims 12 and 13 were objected to as being dependent upon a rejected base claim but otherwise allowable if rewritten in independent form. In light of the above arguments, Applicants assert that claims 12 and 13 are allowable in their present form.

Information Disclosure Statement:

Applicants note that an information disclosure statement with accompanying Form PTO-1449 was submitted on February 4, 1999. Applicants request the Examiner to carefully consider the listed references and return a copy of the signed and initialed Form PTO-1449 from this statement.

CONCLUSION

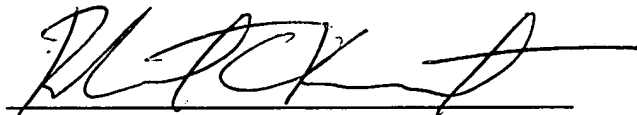
Applicants submit the application is in condition for allowance, and notice to that effect is respectfully requested.

If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5000-74400/RCK.

Also enclosed herewith are the following items:

- ☒ Return Receipt Postcard
- ☐ Petition for Extension of Time
- ☐ Notice of Change of Address
- ☐ Fee Authorization Form authorizing a deposit account debit in the amount of \$
for fees ().
- ☐ Other:

Respectfully submitted,



Robert C. Kowert
Reg. No. 39,255
ATTORNEY FOR APPLICANT(S)

Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C.
P.O. Box 398
Austin, TX 78767-0398
Phone: (512) 853-8850

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